IN THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of the Claims:

1. (Currently amended) ~~The present invention provides a~~ A computer-implemented method of strong decorrelation of input signals ~~which are input~~, the method including the steps of:-

a) deriving input signals by means of a receiver system with sensor means;

~~a)~~ b) processing the input signals to determine delay and rotation parameters which implement at least one elementary paraunitary matrix and transform the input signals into output signals to obtain improvement in a measure of strong decorrelation;

~~b)~~ c) assessing the improvement in the measure of strong decorrelation~~,~~; ~~and~~

~~c)~~ d) if the improvement ~~it~~ is significant designating the output signals as input signals and iterating steps ~~a) and~~ b) and c), and if the improvement is not significant designating the output signals as signals decorrelated in a wide sense~~.~~; and

e) using the signals decorrelated in a wide sense as one of separated signals and pre-processed signals for input to another process.

2. (Previously presented) A method according to Claim 1 wherein the delay and rotation parameters which transform the input signals characterise a single elementary paraunitary matrix.

3. (Previously presented) A method according to Claim 2 including producing a paraunitary matrix by cumulatively multiplying successive elementary paraunitary matrices produced by iterating step a).

4. (Previously presented) A method according to Claim 2 wherein the range of signal delay

parameters is a set of discrete delay vectors, and the delay and rotation parameters are determined by generating a respective version of the input signals delayed by each delay vector in the set, and for each version finding rotation parameters which at least approach producing maximisation of output signals' strong decorrelation.

5. (Previously presented) A method according to Claim 4 wherein the rotation parameters which at least approach producing maximisation of output signals' strong decorrelation are determined using an algorithm for pointwise decorrelation of the kind used in instantaneous decorrelation.

6. (Previously presented) A method according to Claim 1 involving n input signals where n is an integer greater than 2, wherein the range of signal delay parameters is a set of n-element delay vectors and the range of signal rotation parameters is a set of $n(n-1)/2$ angle parameters.

7. (Previously presented) A method according to Claim 1 involving n input signals where n is an integer greater than 2, wherein step a) comprises determining delay and rotation parameters which implement at least one elementary paraunitary matrix providing for rotation of a pair of input signals and relative delay of the or as the case may be each other input signal.

8. (Previously presented) A method according to Claim 7 wherein the n input signals are associated with respective channels wherein step a) has $n(n-1)/2$ successive stages each associated with at least one respective elementary paraunitary matrix and each providing for rotation of signals associated with a respective pair of channels and provision of relative delay associated with the or as the case may be each other channel, the first stage is arranged to process the input signals and the or as the case may be each subsequent stage is arranged to receive signals processed in the respective preceding stage.

9. (Previously presented) A method according to Claim 1 involving a set of n input signals where n is an integer greater than 2, the method having the steps of:

a) producing n(n – 1)/2 replicas of the set of input signals,

b) in each replica selecting a respective signal pair differing to that selected in other replicas, and

c) the step of processing the input signals to determine delay and rotation parameters being carried out for each replica and comprising:

i) determining delay and rotation parameters which implement at least one elementary paraunitary matrix providing for rotation of the respective selected signal pair only, and

ii) determining which replica when transformed by the associated at least one elementary paraunitary matrix gives rise to transformed signals corresponding to improvement in a measure of decorrelation by at least a major part of a maximum extent obtainable over the replicas and designating these transformed signals as output signals.

10. (Currently amended) A method according to Claim 1 wherein the at least one elementary paraunitary matrix implements at least one leading delay, rotation and terminal delay.

11. (Currently amended) Computer apparatus for strong decorrelation of signals, the apparatus being programmed for reception of input signals derived by means of a receiver system with sensor means, and also being programmed:-

a) to process the input signals to determine delay and rotation parameters which implement at least one elementary paraunitary matrix and transform the input signals into output signals to obtain improvement in a measure of strong decorrelation;

b) to assess the improvement in the measure of strong decorrelation, ~~and~~

c) if ~~it~~ the improvement is significant to designate the output signals as input signals and iterate a) and b), and if the improvement is not significant to designate the output signals as signals decorrelated in a wide sense~~.~~; and

d) to make the signals decorrelated in a wide sense available for use as one of separated signals and pre-processed signals for input to another process.

12. (Previously presented) Apparatus according to Claim 11 wherein the delay and rotation parameters which transform the input signals characterise a single elementary paraunitary matrix.

13. (Previously presented) Apparatus according to Claim 12 programmed to produce a paraunitary matrix by cumulatively multiplying successive elementary paraunitary matrices produced in iterative processing.

14. (Previously presented) Apparatus according to Claim 12 wherein the range of signal delay parameters is a set of discrete delay vectors, and the computer apparatus is programmed to determine the delay and rotation parameters by generating a respective version of the input signals delayed by each delay vector in the set, and to find for each version rotation parameters which at least approach producing maximisation of output signals' strong decorrelation.

15. (Previously presented) Apparatus according to Claim 14 programmed to determine the rotation parameters which at least approach producing maximisation of output signals' strong decorrelation using a pointwise decorrelation algorithm.

16. (Currently amended) Apparatus according to Claim 11 programmed to receive n input signals where n is an integer greater than 2, and also programmed to determine delay and rotation parameters which implement at least one elementary paraunitary matrix providing for rotation of a pair of input signals and relative delay of the or as the case may be each other input signal.

17. (Currently amended) Apparatus according to Claim 16 programmed to define respective channels for the n input signals and to process the input signals in $n(n-1)/2$ successive stages each associated with at least one respective elementary paraunitary matrix and each providing for rotation of signals associated with a respective pair of channels and provision of relative delay associated with the or as the case may be each other channel, the first such stage involving processing the input signals and the or as the case may be

each subsequent stage involving processing signals resulting from processing in the respective preceding stage.

18. (Previously presented) Apparatus according to Claim 11 programmed to receive a set of n input signals where n is an integer greater than 2, and also programmed to:

a) produce n(n – 1)/2 replicas of the set of input signals,

b) in each replica select a respective signal pair differing to that selected in other replicas, and

c) implement processing of the input signals to determine delay and rotation parameters for each replica as input signals and determine:

i) delay and rotation parameters which implement at least one elementary paraunitary matrix providing for rotation of the respective selected signal pair only, and

ii) which replica when transformed by the associated at least one elementary paraunitary matrix gives rise to transformed signals corresponding to improvement in a measure of strong decorrelation by at least a major part of a maximum extent obtainable over the replicas and designate these transformed signals as output signals.

19. (Previously presented) Apparatus according to Claim 11 wherein the at least one elementary paraunitary matrix implements at least one leading delay, rotation and terminal delay.

20. (Currently amended) A computer ~~program product comprising a~~ readable medium ~~with~~ encoded with a computer ~~readable instructions~~ program for implementing strong decorrelation of signals derived by means of a receiver system with sensor means and input to computer apparatus by controlling the computer apparatus:-

a) to process the input signals to determine delay and rotation parameters which implement at least one elementary paraunitary matrix and transform the input signals into output signals to obtain improvement in a measure of strong decorrelation;

b) to assess the improvement in the measure of strong decorrelation, ~~and~~

c) if it is significant to designate the output signals as input signals and iterate a) and b), and if the improvement is not significant to designate the output signals as signals decorrelated in a wide sense~~.~~; and

d) to make the signals decorrelated in a wide sense available for use as one of separated signals and pre-processed signals for input to another process.

21. (Currently amended) A computer ~~program product~~ readable medium according to Claim 20 wherein the delay and rotation parameters which transform the input signals characterise a single elementary paraunitary matrix.

22. (Currently amended) A computer ~~program product~~ readable medium according to Claim 21 wherein the instructions provide for control of computer apparatus to implement the step of producing a paraunitary matrix by cumulatively multiplying successive elementary paraunitary matrices produced by iterating processing of the input signals to determine delay and rotation parameters.

23. (Currently amended) A computer ~~program product~~ readable medium according to Claim 21 the range of signal delay parameters is a set of discrete delay vectors, and the instructions provide for the delay and rotation parameters to be determined by generating a respective version of the input signals delayed by each delay vector in the set, and for each version finding rotation parameters which at least approach producing maximisation of output signals' strong decorrelation.

24. (Currently amended) A computer ~~program product~~ readable medium according to Claim 23 wherein the instructions provide for the rotation parameters which at least approach producing maximisation of output signals' strong decorrelation to be determined using a pointwise decorrelation algorithm.

25. (Currently amended) A computer ~~program product~~ readable medium according to Claim

20 wherein the instructions provide for control of computer apparatus to receive n input signals where n is an integer greater than 2, and to provide for processing the input signals to determine delay and rotation parameters to comprise determining such parameters which implement at least one elementary paraunitary matrix providing for rotation of a pair of input signals and relative delay of the or as the case may be each other input signal.

26. (Currently amended) A computer ~~program product~~ readable medium according to Claim 25 wherein the instructions provide for respective channels to be defined for the n input signals and also for processing the input signals to determine delay and rotation parameters to have $n(n-1)/2$ successive stages each associated with at least one respective elementary paraunitary matrix and each providing for rotation of signals associated with a respective pair of channels and provision of relative delay associated with the or as the case may be each other channel, the first stage being arranged to process the input signals and the or as the case may be each subsequent stage being arranged to receive signals processed in the respective preceding stage.

27. (Currently amended) A computer ~~program product~~ readable medium according to Claim 22 wherein the ~~having~~ instructions provide for control of computer apparatus to receive a set of n input signals where n is an integer greater than 2, and for controlling the computer apparatus to:

a) produce $n(n-1)/2$ replicas of the set of input signals,

b) in each replica select a respective signal pair differing to that selected in other replicas, and

c) carry out processing of determine delay and rotation parameters for each replica as input signals by:

i) determining delay and rotation parameters which implement at least one elementary paraunitary matrix providing for rotation of the respective selected signal pair only, and

ii) determining which replica when transformed by the associated at least one elementary paraunitary matrix gives rise to transformed signals

corresponding to improvement in a measure of strong decorrelation by at least a major part of a maximum extent obtainable over the replicas and designating these transformed signals as output signals.

28. (Currently amended) A computer ~~program product~~ according to Claim 22 wherein the at least one elementary paraunitary matrix implements at least one leading delay, rotation and terminal delay.